

CLAIMS

5 1. Method for the detection of acute respiratory tract infection comprising the simultaneous amplification of several target nucleotide sequences present in a biological sample by means of a primer mixture comprising at least one primer set from each one of the following gene regions:

- the F1 subunit of the fusion glycoprotein gene for RSV,
- the hemagglutininneuraminidase gene for PIV-1,
- the 5' noncoding region of the PIV-3 fusion protein gene,
- 16 S rRNA sequence for *M. pneumoniae*,
- 16S rRNA sequence for *C. pneumoniae*,
- the 5' noncoding region for enterovirus,
- the non-structural protein gene from influenza A,
- the non-structural protein gene from influenza B, and,
- the hexon gene for adenoviruses.

10 2. Method according to claim 1 wherein said 16S rRNA primers are replaced by primers from the spacer region between the 16S and the 23S rRNA sequences.

15 3. Method according to claim 1 or 2 wherein in addition also at least one primer pair for the specific detection of *B. pertussis* and *B. parapertussis* are used.

20 4. Method according to any of claims 1 to 3 wherein said primers are chosen from Table 2 or Table 4.

25 5. Method according to any of claims 1 to 4 wherein said amplified products are subsequently detected using a probe, with said probe being preferably selected from Table 3, Table 4 or Table 5.

30 6. Primer chosen from SEQ ID NOs 17, 18, 19, 20, 21, 22 and 23.

35 7. Probe chosen from SEQ ID NOs 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33 and 34.

8. Kit for the detection of acute respiratory tract infection comprising a set of primers for performing a method according to any of claims 1 to 4.

9. Kit for the detection of acute respiratory tract infection comprising a set of probes for performing a method according to claim 5.

10. Kit according to claim 9, wherein said probes are applied as parallel lines on a solid support, preferably on a nylon membrane.

11. Kit for the detection of acute respiratory tract infection comprising at least one primer according to claim 6.

12. Kit for the detection of acute respiratory tract infection comprising at least one probe according to claim 7.

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